REALCOLD

Hydraulic Power Pack

Model RC100

INSTRUCTION MANUAL

CE

Imported by:

Licensed distributor

Specifications:

Designation:	**Hydraulic power pack**			
Model No:	**RC100**	**Type:**	**50**	☐ Supplied
Length:	600mm			
Height:	470mm			
Width:	800mm			
Weight:	120Kg (Nett, no oil)			
Electric motor:	3Ph, 5.5Kw, Delta connection			
Voltage:	380-420VAC, 50Hz, 10.4amp			
Transmission:	Aluminium drive couplers Rubber spider damper			
Hydraulic pump:	Single gear type			
Hydraulic oil:	BP HLPHM46 or equivalent			
Oil capacity:	55L nominal			
Filtration:	Return type filter, 10micron			
Level indication:	Sight glass with thermometer			
Maximum pressure:	20.7Mpa/3000Psi			
Standard hose	12.7mm x 5 metres			
Directional valve:	5/3 open centre, pneumatic pilot			
Control circuit:	Pneumatic, anti-tiedown			
Air supply:	6-7.4Bar/90-110Psi			
Over temp protection:	Thermal switch, NC, 250VAC max/42VDC max, 60°c			

Serial No: _____

Manufacture Date: _____

Test Date: _____

Manufactured By: Argus Realcold Ltd
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CE

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SAFETY INSTRUCTIONS FOR REALCOLD HAND TOOLS

As a designer, manufacturer, and supplier of plant and equipment Argus Realcold Ltd has provided plant, equipment, and all relevant information to ensure the safe use in accordance with the New Zealand Health and Safety in employment Act 1992.

The “CE” marked machines provided by Argus Realcold Ltd also meet the EC machinery directive 98/37/EC and any other relevant EC directive. It is the responsibility of the owner to ensure that the machine is used safely in accordance with the instructions and for the purpose that the machine was designed for.

The hand tools that we supply, with the exception of the RC33, are designed for two-handed operation and include the following:

RC20	Sheep Light Duty Scissor
RC21	Sheep Hock Cutter (Various blade options available)
RC22	Hydraulic Sheep Hock/Horn/Neck Cutter
RC25	Hydraulic Heavy Duty Sheep/Goat/Deer Hock/Horn Cutter
RC30	Hydraulic Beef Hock/Horn Cutter, Hog Head Cutter (Various blade options available)
RC31	Pneumatic Sheep & Lamb Brisket Opener
RC33	Pneumatic Wool Shear
RC35	Hydraulic Beef Loin/Head Cutter (Various blade options)
RC45	Hydraulic Heavy Duty Beef Horn Cutter
RC50	Air/Oil Intensifier
RC100	Hydraulic Power Pack

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NOTICE TO OPERATORS, MAINTENANCE, AND CLEAN-UP PERSONNEL

OPERATORS

Stop using a defective or malfunctioning tool immediately. Report the problem or defect immediately to your supervisor for removal of tool from service.

Do not attempt to make repairs yourself; do not tamper with a defective or malfunctioning tool.

Do not attempt to free a jammed or blocked tool yourself.

Remove power from the tool when the tool is left unattended or is not in use.

Never tie-down, bypass, or alter the triggers or safety switches of the tool.

Wear safety glasses when operating this tool.

Do not activate switches of the tool unless you intend to operate and use the tool.

Do not allow unauthorised individuals to operate the tool.

Never place fingers, hands, or other parts of your body in the cutting path of the tool.

This tool is capable of causing severe injury or death if misused.

CLEAN-UP PERSONNEL

Shut off all power and disconnect all hydraulic and air hoses from the tool before performing clean up.

Take extreme care near sharp blades.

MAINTENANCE PERSONNEL

Shut off all power and disconnect all hydraulic and air hoses from the tool before making repairs, performing maintenance, and before replacing or sharpening blades.

Do not use substitute parts or use other than genuine Argus Realcold brand parts.

Use extreme care when testing or operating the tool.

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RC100 HYDRAULIC POWER PACK

INSTRUCTIONS FOR COMMISSIONING

1. Mount the power pack securely in a suitable position as close to the operating station as is possible, with plenty of air space.
   Excessive line length (more than 5 metres) should be avoided where possible.
2. Route the hydraulic hoses to the operating station.
3. Fill the oil tank ¾ of the way to the top of the sight glass window mounted on the side of the tank. Nominal capacity of the tank is 55 Litres.
4. Engage an electrician to connect 3phase power to the power pack motor. Install an isolator near the power pack and an emergency stop at the operating station.
   Connect the thermal switch on the sight gauge to the contactor that supplies power to the unit.
5. "Jog" the motor to confirm the rotation direction of the motor.
   Rotation should be as shown by the arrow on the fan guard.
6. Connect an air supply to the filter mounted on the control board.
   Install a valve in line so that the air supply may be disconnected.
   Do not regulate the pressure of the supply. Run at full main pressure.
7. Connect the hydraulic hoses to the couplers supplied at the rear of the hand tool.
8. Connect the air hoses to the airlines on the hand tool, making sure that air pressure is supplied to the RED hoses, and the GREEN hoses are connected to the signal line.
9. Start the power pack and operate the tool a few times to purge any air from the hand tool and hydraulic hoses.
   If the tool operates in reverse then swap the two air lines at the hydraulic valve.
   Recheck the oil level and fill as required.
10. Adjust the timer on the control board.
    Hydraulic pressure should rise to about 34Bar/500Psi momentarily as the piston reaches the end of its stroke on the return cycle.
11. Tie the hydraulic hoses and air lines together and arrange them so that they are out of the way of the operator.

    Note: The use of cable ties for this can cause the air lines to pinch preventing the hand tool from operating correctly. We recommend using electrical tape instead.

Your RC100 Power Pack is now ready for service.

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SERVICE SECTION

Before servicing this tool it is important to understand how this tool operates. While being very simple, understanding the principles of operation and their interaction will assist you to maintain the tool to optimum working efficiency. Fault diagnosis and repair will also be greatly simplified.

PRINCIPLE OF OPERATION:

Cutting Cycle:

Operating valves are depressed supplying a positive air pressure signal to the pilot of the power pack control board.

- The pilot pressure shuttles the control valve allowing main supply air pressure to operate the power pack hydraulic valve.
- The hydraulic valve opens and hydraulic pressure is transmitted to the rear port of the hand tool via the hydraulic hose.
- This hydraulic pressure then acts on the piston rod assembly in the hand tool, and causes the piston rod assembly to move.
- The movement of the piston rod assembly is now transmitted to the blades via cam links and the blades close.
- Hydraulic pressure will build to 150 bar/2200 PSI as soon as cutting pressure is exerted, causing the blades to cut through the animal's appendage.

Opening Cycle:

- Operating valves are released allowing the positive air pressure signal to vent through the valve exhaust port.
- The pilot pressure shuttles the control valve allowing main supply air pressure to operate the power pack hydraulic valve closing side.
- The hydraulic valve opens and hydraulic pressure is transmitted to the front port of the hand tool via the hydraulic hose.
- This hydraulic pressure then acts on the piston rod assembly in the hand tool, and causes the piston rod assembly to be retracted.
- The movement of the piston rod assembly now pulls the blades via the cam links to the open position.
- A timer removes the air pressure signal from the hydraulic valve once the piston is fully retracted allowing the hydraulic valve to return to centre and remove hydraulic pressure from the hydraulic hoses.

The operating cycle is now complete.

SERVICING:

Before any servicing is attempted on this tool disconnect and unplug the power pack from electrical supply. Disconnect any air supply to the power pack. All hydraulic hoses and air supply hoses must be disconnected to render the tool inoperative according to Occupational Safety & Health requirements.

Daily Maintenance:

The following checks should be performed daily:

- Control board air filter:
  Make sure that it is clean and any water build up is drained.
- Oil level:
  Make sure that the oil is filled to the upper mark on the sight glass window.
  Look for discoloration of the oil at the same time.
  A milky or streaky appearance indicates water contamination.
  If the oil looks dirty or discoloured then the power pack should be scheduled for an oil and filter change as soon as is practicable.
- Dirt build up:
  Dirt and oily build up on the power pack tank and motor can act as insulation, preventing the unit from dissipating heat.
  Endeavour to keep your power pack clean.
  Dirty equipment often leads to problems.
  Also, leaks or other potential problems are much easier to spot and remedy on a clean unit.
- Hydraulic hoses:
  Visually inspect the hydraulic hoses for signs of damage.
  Look particularly for cuts, cracks, and kinks.
  A cut through the protective outer layer may seriously compromise the safety of the hydraulic hose.
  A kink may seriously damage the reinforced layer of the hose.
- Air lines:
  Visually inspect the air lines for signs of damage.
  Look particularly for cuts, cracks, and kinks.
  A cut or kink in the air line will affect the signal at the control board and may result in the tool failing to operate correctly.
- Timer:
  Operate the tool a few times and verify that the timer is removing the opening signal from the hydraulic valve correctly.
  If the signal is not being removed the oil in the power pack will overheat rapidly.
  This overheating can cause serious damage to the power pack.
- Emergency stop:
  While at the operating station, operate the emergency stop two or three times to verify that it is functioning correctly.

Routine Maintenance:

The following checks should be performed at the specified intervals.

All periods are specified in hours of operation.

Any further servicing than covered here should be undertaken by a hydraulic specialist.

It is your responsibility to use your plant operating schedule to determine when these checks fall due.

Oil:

The care of oil is of utmost importance since the oil lubricates in addition to actually transmitting power. Failure to heed the following points set out below will usually lead to system malfunction.

- The reservoir should be filled with BP HLPHM46 or equivalent.
- The oil should be changed at 10,000 hour intervals.
  A regular chemical analysis (approximately every 5,000 hours) of the oil may allow the oil change interval to be extended.
- Contamination or overheating of the oil will require immediate replacement of the oil regardless of time in service.
  Water contamination is particularly critical as the power packs moving parts will lose all lubrication should water be present in the system.
- Oil transfer for initial filling and subsequent replenishing should be carried out using a pump-filtration unit providing a minimum of 20 micron filtration.
  The reservoir should be filled using clean new oil to a level not exceeding the maximum level and not less than the minimum level shown on the reservoir sight gauge.
- Do not let the oil in the system overheat.
  Normal operating temperature is about 40°C.
  Maximum operating temperature is 60°C.
  Check the temperature at the sight glass periodically.
  Overheating not only breaks down the oil and causes damage to the seals etc, it also reduces the lubricity, lowers the viscosity, and reduces the effectiveness of the oils anti-wear additives.
- Store all new oil in sealed containers away from extreme temperatures. Open containers will quickly collect dirt and dust.
- Do not run the system with the air breather off the reservoir.

Oil Filter:

The oil filter should be changed regularly at 1,000 hour intervals.

These times can be varied within reason to coincide with other servicing schedules.

Directional Valve:

Remove the pneumatic cylinders from the valve periodically and clean them.

Appendix 1

Parts Diagram and Ordering Form

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RC100-50 HYDRAULIC POWER PACK

ITEM NO.	QTY.	PART N0.	DESCRIPTION
1	1	180-ND86B	COUPLING, ELECTRIC MOTOR HALF
2	1	180-ND86P2	COUPLING, HYDRAULIC PUMP HALF
3	1	180-QVV-F06	HYDRAULIC COUPLER FEMALE
4	1	180-QVV-M06	HYDRAULIC COUPLER MALE
5	1	180-R82	COUPLER DAMPER
6	1	180-RV3A-10-S-O-36	PRESSURE RELIEF VALVE
7	1	180-SNA076B-S-T-12-O60	LEVEL GAUGE WITH THERMO SWITCH
	1	180-TS-SNA-O-60	THERMO SWITCH
8	1	180-SMK20-R1-4PD	TEST COUPLING
9	2	180-STDO1630	TUBE STAND OFF 16 X 30
10	1	300-2004642	HYDRAULIC PUMP
	1	300-42520000	SHAFT KEY
	1	300-62046601	HYDRAULIC PUMP SEAL KIT
11	1	300-31-4	CETOP3 MANIFOLD
12	1	300-CF55-GC	HYDRAULIC TANK ASSEMBLY
13	1	300-DG18V3-8C-V-P-61	HYDRAULIC VALVE
	1	300-858995	HYDRAULIC VALVE SEAL KIT
14	1	300-KS810	8 x 10mm KEY
15	1	300-LS300	BELLHOUSING FR132
16	1	300-LS300-CR	BELLHOUSING CENTERING RING
17	1	300-LS300-GASK	BELLHOUSING GASKET
18	1	300-M34005504SLA	ELECTRIC MOTOR 5.5KW
19	1	300-MPF100	HYDRAULIC FILTER ASSEMBLY
	1	300-MPF100-P10	FILTER ELEMENT
20	1	300-TR2-B-S10	HYDRAULIC TANK FILLER
21	1	800-2-MP-4	4mm RED/GREEN TWINLINE
22	1	800-HYD08-5M	HYDRAULIC HOSE KIT 1/2" 5M
23	2	800-CSM1045-304	CAP SCREW M10x45 304
24	2	800-FWM10-304	M10 FLAT WASHER
25	2	800-SWM10-304	SPRING WASHER M10 304
26	1	900-10010-A	CONTROL BOARD ANTI-TIEDOWN

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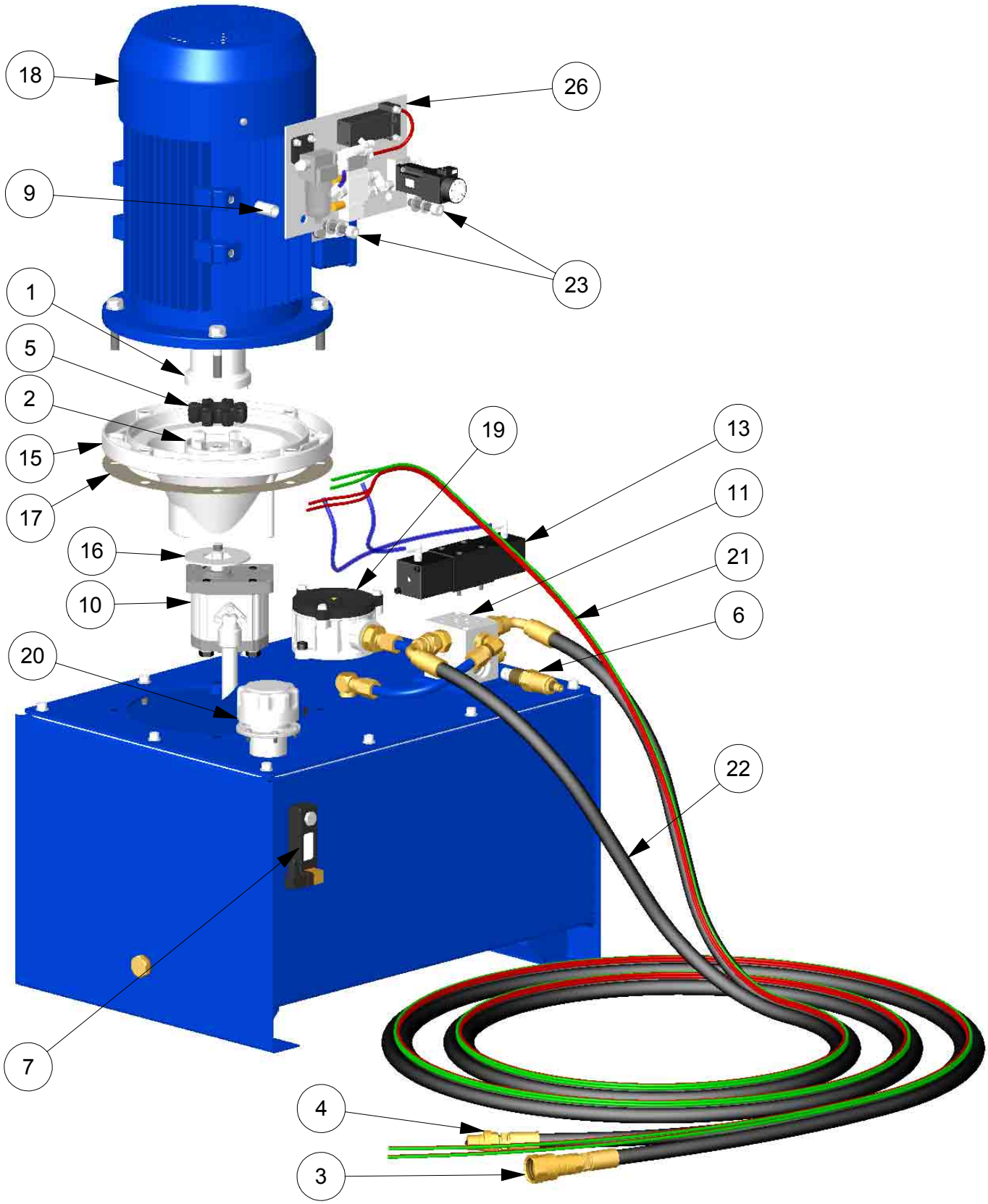
RC100-50 HYDRAULIC POWER PACK



RC100 CONTROL BOARD ANTI-TIEDOWN
900-10010-A

ITEM NO.	QTY.	PART N0.	DESCRIPTION
1	1	180-315202	1-8BSPP PORT PLUG
2	1	180-AF2000-02B	AIR FILTER
3	2	180-AN101-01	SILENCER, BRONZE, 1/8BSP
4	1	180-KQ2Y06-02S	BRANCH T 1-4BSPT 6mm
5	1	180-KQ2X04-06	BRANCH Y REDUCER
6	2	180-KQ2L06-02S	ELBOW PUSH FIT CONNECTOR
7	3	180-KQ2L06-01S	ELBOW PUSH FIT CONNECTOR
8	2	180-KQ2H06-02S	STRAIGHT CONNECTOR 6mm-1/4BSP
9	1	180-KQ2H04-01S	STRAIGHT CONNECTOR 4mm-1/8BSP
10	1	180-KQ2H06-01S	STRAIGHT CONNECTOR 6mm-1/8BSP
11	1	190-2781580101	PNEUMATIC LOGIC VALVE
12	1	190-7097K04450	TIMER BASE
13	1	190-81532001	PNEUMATIC LOGIC VALVE BASE
14	1	190-PRTF10	PNEUMATIC TIMER
15	1	190-SYA7120-02	5/2 PNEUMATIC VALVE
16	2	800-CSM412-304	CAP SCREW M4x12 304
17	2	800-CSM416-304	CAP SCREW M4x16 304
18	2	800-CSM512-304	CAP SCREW M5x12 304
19	2	800-CSM535-304	CAP SCREW M5x35 304
20	4	800-FWM5-304	M5 FLAT WASHER
21	2	800-FWM4-304	M4 FLAT WASHER
22	4	800-SWM5-304	SPRING WASHER M5 304
23	2	800-SWM4-304	SPRING WASHER M4 304
24	1	800-TU0425-R	4mm POLYURETHANE HOSE RED
25	1	800-TU0604-BU	6mm POLYURETHANE HOSE
26	1	900-10010-1-A	CONTROL BOARD MOUNT PLATE

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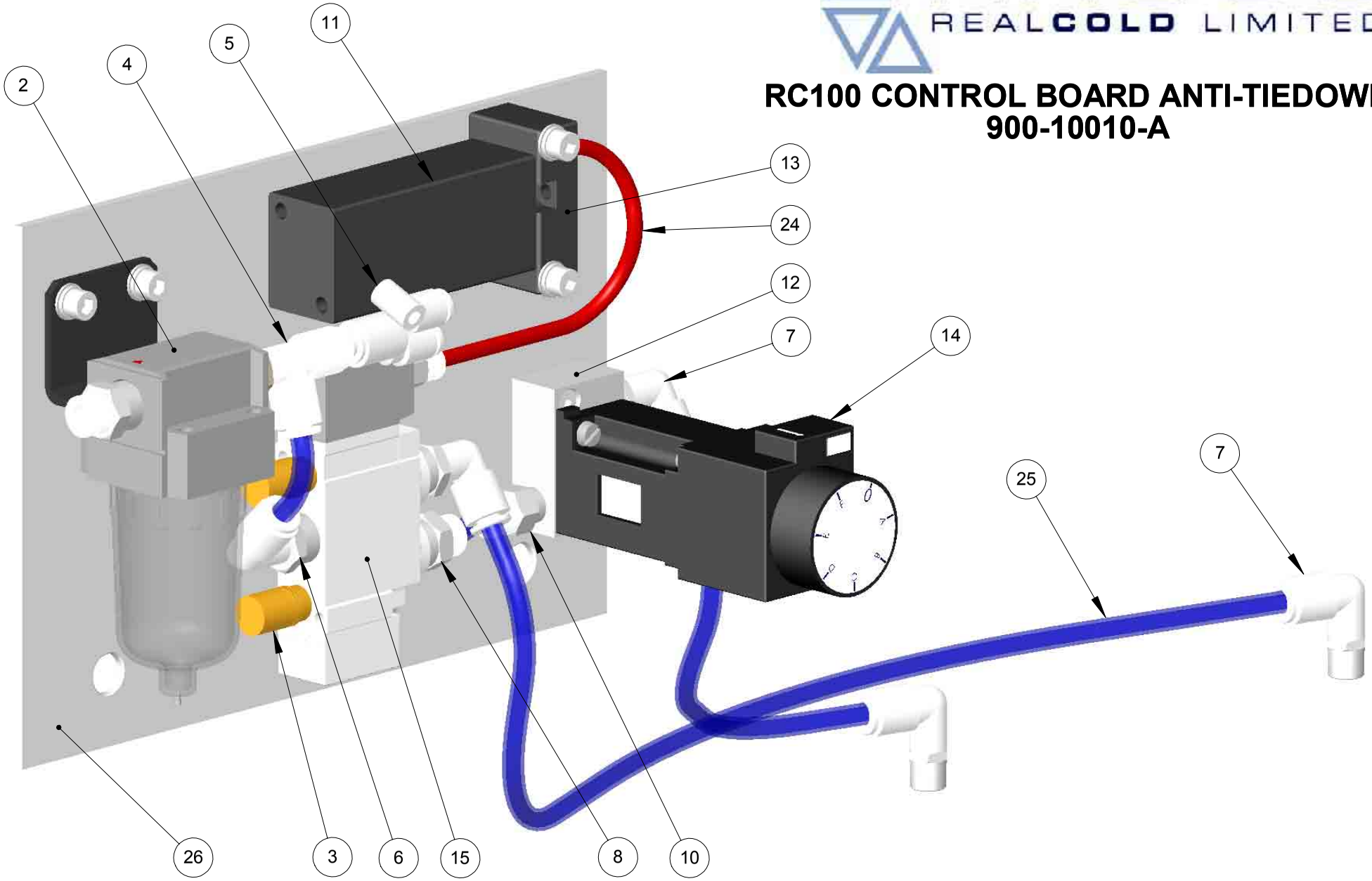
RC100 CONTROL BOARD ANTI-TIEDOWN
900-10010-A



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Order Number _____
Date _____
Tool _____
Serial Number _____

Customer Order Form

Name _____
Address _____
_____
_____
_____

Phone _____
Contact Person _____

Qty	Part Number	Description

Shipping Instructions:

Ship to Address _____
_____
_____
_____
_____

Attention _____

Level of Urgency Normal ☐ Urgent ☐

Appendix 2

Recommended Spare Parts

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Recommended Spare Parts

The following is a list of spare parts that we recommend your engineering department to keep in stock at all times.

Having these parts on hand will assist you to maintain your power pack in good working order, and ensure that you avoid down time while waiting for parts delivery should your power pack require repair.

This list is a minimum recommendation for parts to support one unit in the field.

Where more than one power pack is in service, quantities held in stock should be adjusted accordingly.

Qty	Part Number	Description
1	180-AF2000-02B	AIR FILTER
2	180-QVV-F06	COUPLING SCREW TYPE FEMALE
2	180-QVV-M06	COUPLING SCREW TYPE MALE
1	180-R82	COUPLER DAMPER
1	180-RV3A-10-S-O-36	PRESSURE RELIEF VALVE
1	180-SNA076B-S-T-12-O60	LEVEL GUAGE WITH THERMO SWITCH
1	190-2781580101	PNEUMATIC LOGIC VALVE
1	190-PRTF10	PNEUMATIC TIMER
1	300-62046601	HYDRAULIC PUMP SEAL KIT
1	300-858995	HYDRAULIC VALVE SEAL KIT
2	300-MPF100-P10	HYDRAULIC FILTER ELEMENT
15m	800-2-MP-4	HOSE

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Appendix 3

Circuit Diagram

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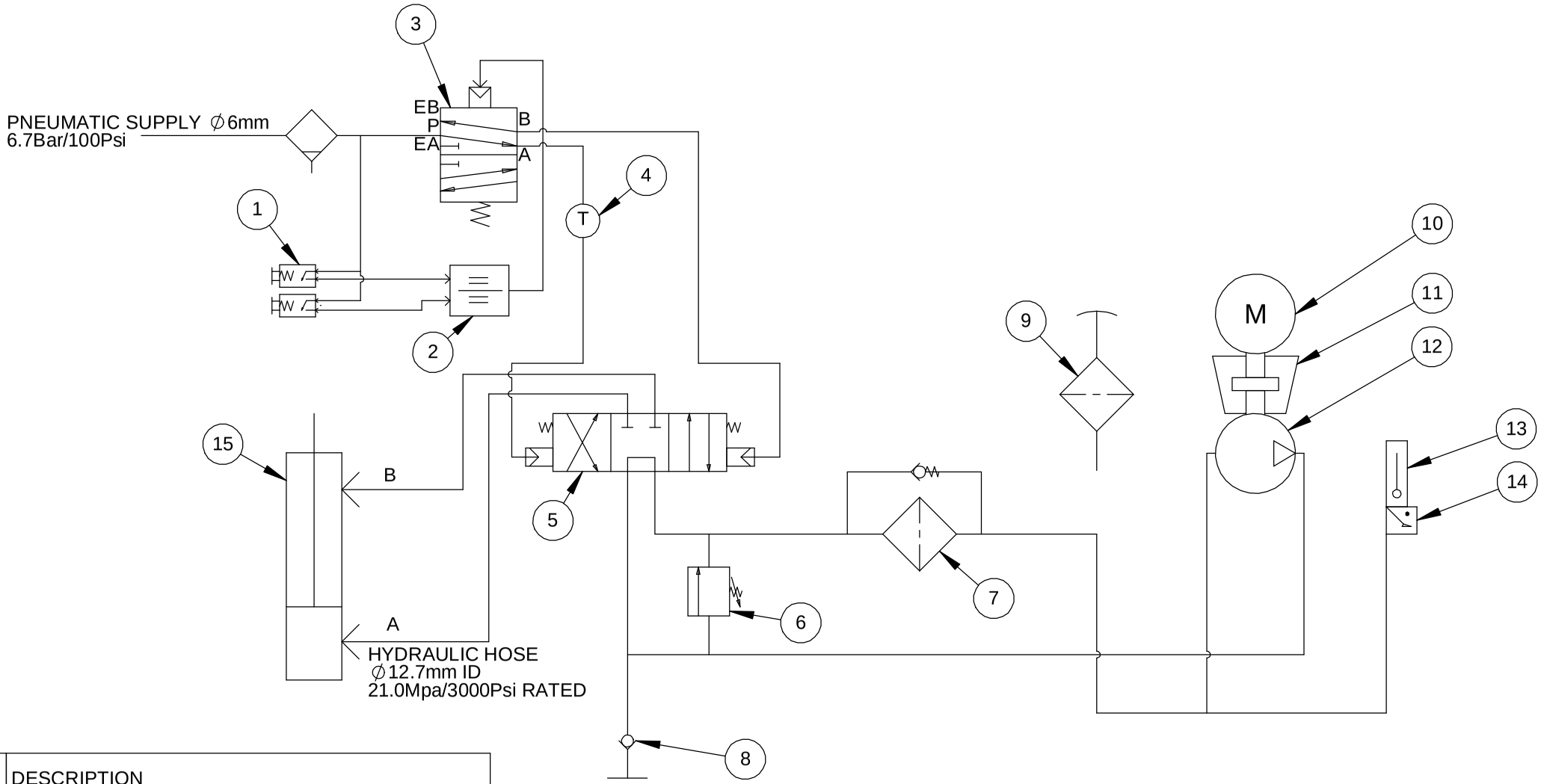

ITEM	DESCRIPTION
1	OPERATING SWITCHES, 3/2 N/NP SPRING RETURN
2	LOGIC VALVE, "AND" FUNCTION 0.3sec
3	OPERATING VALVE 5/2 SPRING RETURN
4	PNEUMATIC TIMER
5	HYDRAULIC VALVE 5/2 OPEN CENTRE
6	PRESSURE RELIEF VALVE
7	RETURN FILTER
8	TEST POINT
9	FILLER/STRAINER/BREATHER
10	ELECTRIC MOTOR
11	DRIVE COUPLING
12	HYDRAULIC PUMP
13	SIGHT LEVEL/TEMP GUAGE
14	OVER TEMP SWITCH
15	HAND TOOL CYLINDER D/A HYDRAULIC

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UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN MILLIMETERS
SURFACE FINISH:
TOLERANCES:
LINEAR:
ANGULAR:

FINISH:

DEBUR AND BREAK SHARP EDGES

DO NOT SCALE DRAWING | REVISION A

ARGUS REALCOLD LIMITED

	NAME	SIGNATURE	DATE	PART NO OLD
DRAWN	B EAST		16-2-2005	
CHK'D	M ROBINS		16-2-2005	
APPV'D				
MFG				
Q.A				

MATERIAL:

TITLE:

CIRCUIT DIAGRAM RC22, RC30, RC35, RC45

PART NO. RC22-CIRC

A3

SCALE:1:1

SHEET 1 OF 1